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Journal of Comparative Germanic Linguistics **5**: 3–34, 2002.

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Key words: coordination, determiner sharing, ellipsis, extended projection, gapping

Abstract. In English coordinate ellipsis constructions, the determiner of a DP in the second conjunct can sometimes be omitted under identity with the determiner of the corresponding constituent of the first conjunct, a phenomenon known as 'determiner sharing'. Following Williams's (1997) analysis of nonconstituent ellipsis, we argue that determiner sharing involves a two-step elision process: coordinate ellipsis plus a process we term 'dependent ellipsis'. Dependent ellipsis is the process by which a coordinate null head licenses the heads of its direct dependents to be null as well. We show that, under the hypothesis that dependent ellipsis is not a transitive relation, the properties of determiner sharing constructions follow, adding some new observations to those noted before in the literature. For example, we explain that subject determiner sharing is usually only possible if Tense is gapped in the second conjunct while object determiner sharing is dependent on Verb-gapping. However, we also show that in certain cases subject D-sharing may be possible without T-gapping, and, vice versa, there are cases where T-gapping does not license subject D-sharing.

1. Introduction

McCawley (1993) noted that in coordinations that involve gapping in the second (and further) conjunct(s) it is possible to omit the determiner of the subject DP in the second (and further) conjunct(s) and 'share' this with the determiner of the subject of the first conjunct. Two examples from McCawley are given in (1).

* For useful comments on an earlier version of this paper, we would like to thank Jonathan Bobaljik, Susi Wurmbrand, and an anonymous reviewer, as well as audiences at the 16th Comparative Germanic Syntax Workshop at McGill University, the Ortega y Gasset Institute in Madrid, and the University College London colloquium series, in particular Annabel Cormack, Olga Fernandez, and Ad Neeleman. Thanks as well to all colleagues who helped by providing judgments on English data. The research of the first author was supported by the Dutch Organization for Scientific Research, grant no. 355-70-007. The second author was supported by the British Federation of Women Graduates and the BFWG Charitable Trust.

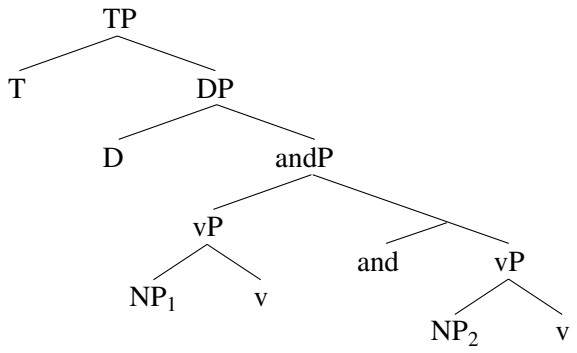
(1) a. Too many Irish setters are named Kelly, ~~too many~~ German shepherds ~~are named~~ Fritz, and ~~too many~~ huskies ~~are named~~ Nanook.

b. The duck is dry and ~~the~~ mussels ~~are~~ tough.

These cases are not easily analyzable as gapping of a bigger constituent than just the verbal head, a constituent including V and D, but not the NP part of the subject.

Johnson (1998, 2000) and Lin (1999) argue that determiner sharing is the result of coordination taking place on a level below the overt determiner so that this is really shared in the actual sense of the word. Given that the conjuncts do not share the NP part of their subjects, such an analysis implies that the subject's determiner is merged separately from and structurally higher than its NP, as proposed by Sportiche (1997). Thus, Lin proposes an analysis like (2) for (1). The coordinated phrases are vPs, the specifier of each hosting the NP parts of their respective subjects. The shared determiner is merged above the coordination.

(2)



Following Johnson (1998), Lin assumes that there can be asymmetric A-movement. This means NP_1 can move into the D-domain above the coordinated vPs to check some feature of D whereas NP_2 in the second vP conjunct remains in situ. This movement seems to violate a number of conditions on movement in general, which Lin consequently argues should be revised. For example, since a (determiner-initial) DP must be formed, the phrase NP_1 must move to D^0, and not raise to spec-DP to check the relevant feature. Thus, Lin notes, we have an instance of 'head movement' of a phrase. Also, moving NP_1 in (2) while leaving NP_2 in situ violates the Coordinate Structure Constraint. We will not discuss the pros and cons of the solutions to these technical problems that Lin offers here but instead explore the possibilities of an alternative approach to the matter. A general reason to try out this alternative is the following.

The central idea of the Johnson/Lin analysis is that determiner sharing is not a special instance of gapping but just involves coordination below the position of the shared determiner. This means that in cases where only T but not V is apparently 'gapped', there is no elided head in the structure at all (see (2)). However, all cases of determiner sharing show the hallmark of coordinate ellipsis: the overt remnants in the second conjunct must necessarily contrast with the corresponding constituents in the first conjunct; see (3a) versus (3b). This is a well-known property of structures involving ellipsis. If there is no ellipsis, there is no such requirement on coordinations, as illustrated by (3c). Hence, the requirement that the dependents in the second conjunct in all cases of determiner sharing be 'disanaphoric', in Williams's (1997) terminology, to the corresponding dependents in the first conjunct appears to be an unexpected feature of the construction in the Johnson/Lin approach.

(3) a. We did not move while any trumpet was blowing or drum beating.
b.*We did not move while any trumpet was blowing or trumpet sounding.
c. We did not move while any trumpet was blowing or any trumpet was sounding.

In this paper we will argue for an analysis of determiner sharing that does involve coordinate ellipsis (gapping) after all and yet captures the correct empirical generalizations concerning when determiner sharing is possible and when it is impossible. The core assumption is that determiner sharing does not involve a single instance of ellipsis of one constituent but a combination of ordinary coordinate ellipsis plus a second process which we will term 'dependent ellipsis', a term meant to indicate both that the process is parasitic on coordinate ellipsis and targets dependents of the elided head. We adopt both the analysis of coordinate ellipsis and the assumption that it allows a further distinct process of elision from Williams (1997) although we will argue that the properties of determiner sharing only follow from this theory if certain restrictions are placed on the applicability of dependent ellipsis.

The paper is structured as follows. In section 2 we will briefly sketch Williams's theory of coordinate ellipsis. In section 3 we argue that the possibility of determiner sharing, and properties of constructions involving it, follow from a straightforward extension of Williams's analysis of coordinate ellipsis plus dependent ellipsis. In that section we will restrict ourselves to cases of subject determiner sharing. In section 4 the analysis is extended to object determiner sharing. In section 5 we will point out a

number of empirical advantages of our analysis, showing that it occurs in circumstances in which the constituent containing the null determiner is the dependent of a coordinate null head other than V or T. Section 6 concludes the paper.

2. Coordinate ellipsis

Williams (1997) proposes an analysis of coordinate ellipsis that is based on the idea that a coordination results from the projection of a bivalent lexical item, as in (4). Note that coordination of heads at various levels within an extended projection is possible, so there are bivalent [C, C], [I, I] and [V, V] (etc.) heads that can project a phrase (4a–c).

(4) a. [C, C]P = CP and CP
That the Earth revolves around the Sun and that the Moon revolves around the Earth are well-established facts

b. [I, I]P = IP and IP
I think that *John will eat meat and Mary will drink wine*

c. [V, V]P = VP and VP
It is ok to *like fish and hate meat*

Gapping involves just another instance of projection of a bivalent lexical item, so it is another instance of coordination. The only difference is that the second head of the bivalent item is null. In other words, Williams assumes that the second conjunct in cases of gapping consists of a 0P. The null head is anaphoric to the first head. Some examples are given in (5).

(5) a. [C, 0]P = CP and 0P
That the Earth revolves around the Sun and 0 the Moon revolves around the Earth are well-established facts

b. [I, 0]P = IP and 0P
I think that *John will eat meat and Mary* 0 *drink wine*

c. [V, 0]P = VP and 0P
It is ok to *eat fish on Fridays and* 0 *meat on Wednesdays*

Williams further argues that the null head that occurs in cases of coordinate ellipsis itself licenses further ellipsis. For instance, the whole complement of the null head can be null, as illustrated in (6b). This is indeed only possible if the head itself is also null (cf. Neijt 1980); see (6c).

(6) a. John gave Mary a book today and 0 Sue a record yesterday.
b. John gave Mary a book today and 0 0 a record yesterday.
c.*John gave Mary a book today and bought 0 a record yesterday.

Note that the type of ellipsis in (6b) involves a two step process. First, there is coordinate ellipsis, This means the structure is the projection of a double head, the second one of which is 0 (so the second conjunct consists of a 0P, just as in (6a)). In addition, there is a further process of ellipsis that is parasitic on the coordinate ellipsis in (6b). There is not one process of gapping that just gaps smaller (6a) or bigger (6b) units. Since this further ellipsis is dependent on coordinate ellipsis of the head, and also involves ellipsis of or into dependents of that head we will refer to this type of ellipsis as 'dependent ellipsis' henceforth, in this double meaning.

Dependent ellipsis is not optional: whether it takes place or not has repercussions for the interpretation of the structure. An elided complement of the 0 head has to be anaphoric to the corresponding complement of the overt head in the first conjunct. So (6b) cannot mean that John gave Sue a record yesterday, for instance. Crucially, if the complement to a null head is *not* elided, it must be *dis*anaphoric to the corresponding complement in the first conjunct. Thus, the following is impossible (compare Williams 1997, p. 622):

(7) *John gave Bill_i a book today and 0 him_i a record yesterday.

As already noted, this pattern only arises under coordinate ellipsis, i.e., only if the head of the second conjunct is null. There is no disanaphora requirement on overt complements in the second conjunct in cases of coordination that do not involve elision of the second head:

(8) John gave Bill_i a book today and gave him_i a record yesterday.

Coordinate ellipsis licenses dependent ellipsis not only of a complete complement of the 0 head but also of just the head of this complement. Apparently, what dependent ellipsis involves is that the 0 head in a coordinate ellipsis structure allows the head of a dependent phrase to be 0 as well. This dependent thus can be a 0P itself, which may contain overt material besides the 0 head. This accounts for cases of apparent non-constituent gapping like (9) (Williams's (141)).[1]

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[1] This is the structure Williams gives for this example. If the complement contains an empty determiner, then this would be the head of the 0P under the DP hypothesis. Below we will discuss the consequences of this, also for the example in (9) (cf. (44)).

(9) John saw pictures of Mary on Tuesday and 0_V [0_N of Sue] on Wednesday.

Of course, in such cases the null head of the complement 0P must be anaphoric again to the head of the corresponding complement in the first conjunct (so 0_N in (9) is interpreted as 'pictures'). Note that the reverse is not true in this case: if there is no dependent ellipsis, an overt N head in the complement to 0_V in the second conjunct need not be disanaphoric to the corresponding N head in the first conjunct: *John saw pictures of Mary on Tuesday and pictures of Sue on Wednesday* is fine. This is so because the disanaphora requirement on the nonelided complement to 0_V as a whole is still satisfied: *pictures of Sue* is disanaphoric to *pictures of Mary*. (The disanaphora requirement on overt remnants holds for the complete overt dependent of V, not for its individual parts, such as its head, separately).

According to Williams, dependent ellipsis is a transitive process, which means a 0 head whose null status is licensed by the 0 head of a coordinate ellipsis can itself act as licenser of elision of the head of its own complement, as illustrated in (10). (In section 4, we will argue that there is in fact a strict limit to the recursivity of dependent ellipsis.)

(10) a. John wants to decapitate Fred and Bill wants to hamstring Pierre.
b. John wants to decapitate Fred and Bill 0 to hamstring Pierre.
c. John wants to decapitate Fred and Bill 0 0 hamstring Pierre.
d. John wants to decapitate Fred and Bill 0 0 0 Pierre.

Elision certainly cannot skip heads, however. Only empty heads seem to license further elision:

(11) a.*John wants to decapitate Fred and Bill wants to 0 Pierre.
b.*John wants to decapitate Fred and Bill wants 0 hamstring Pierre.
c.*John wants to decapitate Fred and Bill 0 to 0 Pierre.

Note again that, although the null head of a complement must be anaphoric to the corresponding head in the first conjunct, the whole complement itself still satisfies the disanaphora requirement when it contains other, overt, material, as required in cases of overt remnants in coordinate ellipsis (all of *to hamstring Pierre*, 0 *hamstring Pierre*, and 0 0 *Pierre* are disanaphoric to *to decapitate Fred*). So with respect to the disanaphora requirement, dependent ellipsis of heads is of no consequence.

We will argue that cases of determiner sharing involve just another instance of coordinate ellipsis plus dependent ellipsis. We will start by

showing in the next section how subject determiner sharing fits into this theory.

3. Subject determiner sharing

In the previous section we discussed cases in which dependent ellipsis involved the complement, or its head, of the null head. It seems reasonable to assume that the coordinate 0 head licenses heads of its other dependents, such as its specifier, to be 0 as well (see also Williams 1997, p. 624). Note that the disanaphora requirement also holds in exactly the same way for all the non-null dependents of the null head, not just for its complement: *John wants to decapitate Bill and Harry*/**John 0 to hamstring Pierre*. Therefore, let us assume the following process of dependent ellipsis:

(12) *Dependent ellipsis*
The 0 head in coordinate ellipsis licenses the heads of its dependents to be 0.

Thus, dependent ellipsis primarily targets the head of the dependent, turning this phrase into a 0P (cf. section 2). In case the dependent is anaphoric to the corresponding dependent in the first conjunct, the rest of its material will be included in the ellipsis process; if overt material remains in the dependent 0P, it must be disanaphoric to the corresponding dependent in the first conjunct.

Given the familiar assumption that the head of a nominal constituent is its determiner (the DP hypothesis, see for instance Abney 1987), determiner sharing can be regarded as just another instance of (12): a coordinate 0 head licenses the head of a nominal dependent phrase, to wit the D, to be 0 itself. In that case, this head must be anaphoric to the corresponding D head in the first conjunct, with the effect of D 'sharing'. We will argue that the properties of this construction indeed follow from this assumption.

For a start, an analysis of determiner sharing in terms of dependent ellipsis accounts for why the phenomenon is only possible in cases of coordination: dependent ellipsis is dependent on the presence of the syntactically null head that is the result of coordinate ellipsis (see (12)). For example, there are no instances of determiner sharing between the two objects in a double object construction or between a subject and an object:

(13) a.*Henry VIII gave too many wives ~~too many~~ presents.
b.*Your daughter hates ~~your~~ son.

Moreover, coordination as such is not enough to license determiner sharing. As observed by McCawley (1993), gapping is crucial. Compare (14) with (1).

(14) a.*Too many Irish setters are named Kelly, ~~too many~~ German shepherds are named Fritz, and ~~too many~~ huskies are named Nanook.
b. *The duck is dry and ~~the~~ mussels are tough.

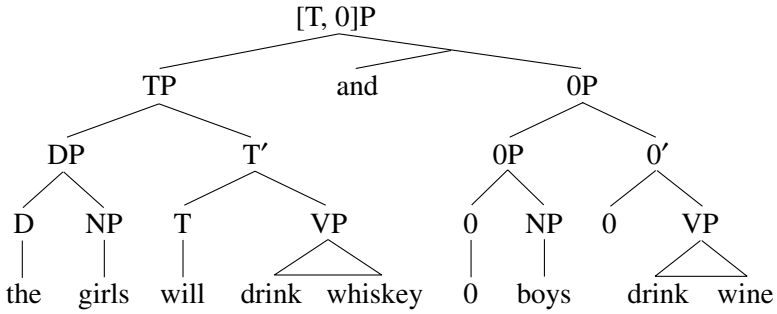
In fact, we must be more precise. As observed by Siegel (1987) and Lin (2000), it is sufficient in cases of subject determiner sharing that there is T-gapping. In addition to that, V-gapping is optionally possible but not necessary. This is illustrated in (15) (from Lin 2000).

(15) a. The girls will drink whiskey and the boys will drink wine.
b. The girls will drink whiskey and ~~the~~ boys drink wine.
(0_T and overt V)
c. The girls will drink whiskey and ~~the~~ boys wine. (0_T and 0_V)

This is what is expected given (12). The subject is a dependent of T rather than V (at least at surface structure, which is what is at stake for (12)). Hence, only coordinate ellipsis in a coordination of two TPs results in a null head of which the subject in the second conjunct is a dependent. See (16), which gives the structure of (15b).[2]

[2] We assume an asymmetric structure for coordinations (see Johannessen 1998 among others). This is compatible with the idea that the coordination is the projection of a bivalent [T, 0] head, despite structurally being headed by &, as T but not the coordinator has categorial features (hence, with respect to those features [T, 0] and not & is the head; cf. Di Sciullo and Williams 1987 on relativized heads). T is [+V] (cf. Grimshaw 1991). The assumption that the coordinator does not have categorial features is supported by the fact that, in contrast to a head like T, it can extend projections of any category.

(16)



The optional V-gapping (see (15c)) is accounted for as well: it is yet another instance of dependent ellipsis, this time into the complement of 0_T.

As noted in the introduction, another property of the D-sharing construction that follows from analyzing it as an instance of coordinate ellipsis plus dependent ellipsis is that it shows the disanaphora requirement on overt remnants. The rest of the DP with a 0_D head must be disanaphoric to the corresponding part of the DP with the overt determiner; see (17).

(17) a.*Too many Irish setters are named Kelly, ~~too many~~ Irish setters ~~are named~~ Paddy, and ~~too many~~ Irish setters ~~are named~~ Shane.
b.*The girls will drink whiskey and ~~the~~ girls ~~will~~ drink wine.

Not all determiners can be shared. As observed by McCawley and Lin, indefinite determiners, numerals, and demonstratives cannot:

(18) a.*An Irish setter is usually named Kelly, ~~a~~ German shepherd ~~is named~~ Fritz, and ~~a~~ Husky ~~is named~~ Nanook.
b.*Two girls will drink whiskey and ~~two~~ boys ~~will drink~~ wine.

It has been argued by Lyons (1989), amongst others, that indefinite determiners, in contrast to definite ones, are not instances of the category D but function as modifiers of the noun within the NP (see also Lin 2000).[3]

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[3] Concerning the determiners that can be shared, there is one that also occurs as a degree modifier of adjectives, in which case it seems to behave like a modifier rather than a head, namely *enough* (see Doetjes, Neeleman, and Van de Koot 1998). However, it seems that, in addition to the modifier *enough*, which does not select its modifiee, there is a head *enough* that selects for an NP complement. The modifier *enough* must follow its modifiee, whether this is an AP ((ia)) or a DP ((ib)). In contrast, the head *enough* can either precede or follow its NP complement ((ic)):

(i) a. This sweater is pink enough / *enough pink to draw anyone's attention.
b. John is linguist enough / *enough linguist not to wear pink sweaters that attract attention.
c. There is enough coffee / coffee enough to go around.

This means that dependent ellipsis cannot target these since this process targets the head of the dependent in question (see (12)).

Some cases which at first sight do not seem to involve T-gapping of the regular type discussed above still license D-sharing. These involve gapped negative modals, as discussed by Siegel (1984, 1987). Consider first the following data, not involving D-sharing yet.

(19) a. Ward can't eat caviar and Sue can't eat beans.
b. Ward can't eat caviar and Sue eat beans.
c. Ward can't eat caviar and Sue beans.

In (19a) both occurrences of *can't* have scope over their own conjunct only. In (19b), however, which only seems to differ from (19a) in involving T-gapping, this reading is no longer possible. Instead, the negative modal gets wide scope; the sentence has a reading in which *can't* has the entire conjunction in its scope ('it cannot be the case that Ward eats caviar and Sue eats beans at the same time'). Both readings are possible in (19c).

At first sight, this difference in meaning may seem to indicate that (19b) is not just (19a) plus coordinate T-ellipsis. Nevertheless, as Lin (1999) shows, determiner sharing is still possible in this case:

(20) The girls can't eat caviar and boys eat beans.

According to Lin, this shows that D-sharing necessarily involves coordination below shared T and D nodes (see (2)). The wide scope reading of the apparently 'gapped' T follows directly from its syntactic position, from which it c-commands the coordinated vPs. The wide scope reading for the modal in (19c) follows in the same way. The distributed scope reading for this latter example is analyzed by Lin as an instance of full TP-ellipsis, after moving subject and object out of TP in the second conjunct.[4] If that were so, however, determiner sharing should be impossible in cases like (19c) when it has the distributed reading for the gapped negative modal. Since D is below T and T is not shared in this reading, D cannot be shared either. This is incorrect, however. An example like (21) allows for the

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It turns out that, as expected, only the head *enough* can be shared, the modifier cannot:

(ii) a. Enough men wear yellow trousers and women pink blouses to keep the fashion industry busy.
b. * John is man enough and Harry linguist to endure such terrible conferences.

[4] This appears to raise some technical issues. At least, as it stands, this analysis seems to entail that objects can move to some position above TP in English and that they only do so if a remnant TP is to be created that can be elided (after all, the object in the first conjunct is apparently not moved out of TP).

distributed scope reading. For example, one native speaker supplied the following context in which (21) was grammatical for her. "Imagine that there was supposed to be a dancing exhibition event put on by the class, but it can't go ahead because the class can't manage to put together all the dances correctly. In particular, it has always been a problem getting girls to do the samba right, and there is always a shortage of boys who can do the tango. Anyway, for whatever reason, the event cannot go on. So, the dance exhibition will not take place this week, but I don't know whether (it's because) too many girls can't dance the samba or (whether) too many boys can't dance the tango."

(21) I don't know whether too many GIRLS can't dance the SAMBA or ~~too many~~ BOYS ~~can't dance~~ the TANGO.

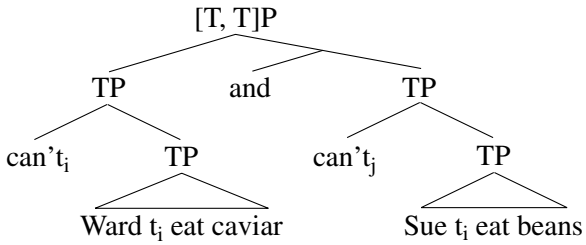
Hence, D-sharing remains possible in the reading which is supposed not to involve T-sharing in Lin's analysis. This appears to be incompatible with a 'coordination below T and D' analysis of D-sharing.

However, our analysis also seems to face a problem here: (19b) must involve coordinate T-ellipsis since the dependent ellipsis that produces the null D head is licensed by the null T head that results from this coordinate ellipsis. But as Siegel (1984, 1987) already pointed out, if (19b) is an instance of 'ordinary' gapping of the modal, the difference in interpretation with the alleged source, ungapped (19a), is unexpected. So, let us see how the difference in interpretation can be reconciled with the assumption that there is T-gapping in (19b).

First of all, consider why (19a), without any gapping, gets a distributed scope reading, but not a wide scope reading, for the negative modal. Suppose that operators like negation and modals take their scope via a raising operation at LF that adjoins them to their clause (much like QR), as assumed by Siegel (1984).[5] Both conjuncts contain such a modal here, and both raise. Thus (19a) has an LF like (22).

[5] In contrast, Siegel (1987) argues more or less for the opposite, namely a kind of operator lowering. In this view the negated modal starts out as a sentence operator and is put in place by an instance of Bach's (1984) operation of Right-Wrap. This operation resembles the operation of prosodic inversion which is supposed to put things like second position clitics into place, the difference being that Right-Wrap mentions the first syntactic constituent as the thing around which the modal is inverted, rather than the first prosodic constituent. For our purposes it does not really matter which version is correct, raising the modal or lowering it, but we will work out our proposal under the assumption of the former.

(22)



Note that the modal in the first conjunct c-commands both conjuncts, hence, in principle it could take scope over both conjuncts. The fact that in this case the first operator only takes scope over the first conjunct follows from relativized minimality if relativized minimality is sensitive to operators themselves rather than to the elements (traces) bound by or attracted by the operator, as proposed by Manzini (1999). In that case the first modal operator in (22) cannot take scope across the second one, resulting in the distributed scope reading. In other words, the LF in (22) translates into the logical representation in (23).[6]

(23) $\neg\Diamond$[eat (ward, caviar)] & $\neg\Diamond$[eat (sue, beans)]

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[6] An anonymous reviewer notes that in the structure in (22) the negative modal in the first conjunct c-commands the conjunctor itself. This might appear to be problematic, as the conjunctor *or* can have a conjunctive interpretation if it appears in the scope of *can't* whereas in *Ward can't eat caviar or Sue can't eat beans* a conjunctive reading is not available. This is only an apparent problem. Consider first why conjunctive readings for *or* are allowed in the scope of negation. According to the neo-Gricean school of semantic interpretation, *or* is interpreted inclusively, which means it is in principle always compatible with a situation that involves a conjunction. However, as a result of a scalar implicature, the exclusive reading for *or* is usually obtained. But as Gazdar (1979) argues, scalar implicatures are blocked in the scope of negation. So, (i) implicates that the speaker does not speak both German and Dutch while (ii) would not be false in a situation where the speaker speaks neither German nor Dutch.

(i) I speak German or Dutch $\Rightarrow \neg$(I speak German and Dutch)

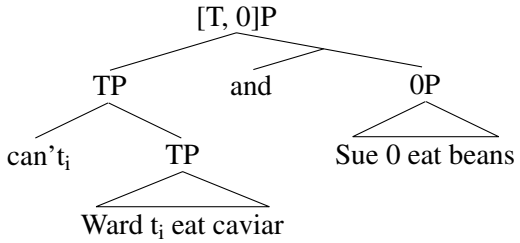
(ii) I don't speak German or Dutch $\not\Rightarrow \neg$(I don't speak German and Dutch)

In short, the conjunctive reading that *or* allows is not excluded by a scalar implicature when both conjuncts are in the scope of a negative operator, as in (ii). In a structure like (22), however, only one of the conjuncts is in the scope of the negative operator. That the negative operator c-commands the conjunctor does not make it scope over the second conjunct because of the relativized minimality effect we note in the text. One also cannot say that the scalar implicature is blocked already when the negative operator scopes over just the first conjunct and the coordinator since this statement is uninterpretable. Thus, the semantic formula corresponding to this statement, as given in (iii), is simply not well-formed; the conjunctor is an operator that takes two arguments, but it has only one in (iii).

(iii) *$\neg$[eat (ward, caviar) $\vee$] $\neg$[eat (sue, beans)]

Now, the null head in (19b) is not merely a phonologically nonspelled-out counterpart of the overt modal in (19a). We assumed in section 2 that it is a syntactic 0 head that lacks any inherent features.[7, 8] (Consequently, it completely depends on the overt head in the first conjunct for its interpretation, see below.) Since this head does not have any features at all, it also does not have the features which turn a head into an operator. This in turn means that it is not subject to the LF-raising rule that targets such elements. Hence, the LF for (19b) is like (24).

(24)



Here there is no intervening operator between the raised *can't* of the first conjunct and the rest of the conjunction. Hence, it takes wide scope: the LF in (24) translates into the logical representation in (25).

(25) $\neg\Diamond$[eat (ward, caviar) & eat (sue, beans)]

So, given an analysis of coordinate ellipsis in which the second conjunct is headed by 0, the difference in interpretation between (19a) and (19b) is not unexpected after all.

Let us see, finally, whether the scope ambiguity displayed by the modal in (19c), where both T and V are empty, can be explained as well. Given

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[7] Our use of subscripts with null heads, like 0_T and 0_D, thus is not meant to refer to some categorial feature of the head. It is only used as a typographical means to facilitate reading: it indicates the structural position the head is in (i.e. 0_T is a 0 head which is in the structural position in which a T head would be and so on).

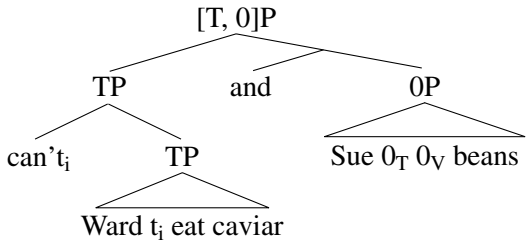
[8] Nevertheless, there must be subject raising to the specifier of the 0 head as, after all, this is what licenses subject determiner sharing under our view. If the null head does not have any features, it cannot be responsible for attraction of the subject. This is corroborated by the fact that, in contrast to an overt T, 0_T does not assign nominative to its specifier. As pointed out by Siegel (1987), the subject appears in a default accusative here:

(i) You can't listen to Cellentano and me / *I to Marley at the same time.

Instead we assume that, in general, subject raising is triggered by the Extended Projection Principle rather than by case considerations (see Marantz 1992, Burzio 2001). For concreteness we assume, following Grimshaw (1997), that the EPP is a general condition that states that the highest A-position in an extended projection must be filled. However, any version of the EPP that is formulated as a general condition on predication, rather than as a feature (Chomsky 1995), will do (cf. Williams 1980, Ackema and Neeleman 1998).

what we have just said, we expect there to be operator raising in the first conjunct but not in the second conjunct in this case as well. The LF that is derived initially differs from the one we gave for (19b) only in that the head corresponding to the head of the verbal predicate in the first conjunct is now 0 as well in the second conjunct:

(26)



As it stands, however, (26) is not a well-formed LF. The 0_V head in the second conjunct must acquire some semantic content; in particular, it must be turned into a predicate, otherwise the two arguments (*Sue*, *beans*) would not be licensed.

This brings us to the general question of how the semantics of the second conjunct is arrived at in coordinate ellipsis. Here, we will make use of a process based on Fiengo and May's (1994) mechanism of reconstruction at LF, but adapted to cases of gapping (Fiengo and May propose it for VP-ellipsis). This works as follows. If the second conjunct is structurally identical to a (sub)tree in the first conjunct, all terminal vocabulary of the phrase marker in the first conjunct is copied to the corresponding terminal nodes in the second conjunct, except for those terminals in the second conjunct that already contain vocabulary items.

Consider how this works in a simple case of coordinate ellipsis like (27).

(27) John gave the newspaper to Mary and Harry 0_V 0_D 0_N to Peter.

The second conjunct, a TP, is structurally identical to the TP in the first conjunct. Hence, reconstruction may apply. This means the content of *gave* is copied into 0_V, the content of *the* is copied into 0_D, and the content of *newspaper* is copied into 0_N. The content of *John*, *to*, and *Mary* is not copied, however, because the corresponding terminal nodes in the second conjunct do not lack content. So, the result is:

(28) John gave the newspaper to Mary and Harry *gave the newspaper* to Peter.

Consider now how this works out in the case where both a negative modal

and the verb are elided in the second conjunct, as in (19c). The question is whether reconstruction applies before or after the modal raises to take scope. Both this raising and reconstruction are LF processes, hence we should not expect any intrinsic ordering between the two. Therefore, it is plausible to assume that they can apply in either order. Suppose that the modal in the first conjunct raises before reconstruction takes place, resulting in the structure we already gave in (26). Here, the second conjunct (a 0P) is structurally identical to the lower TP-segment in the first conjunct. Hence, reconstruction copies the content of the terminal nodes of this segment into those terminal nodes in the second conjunct that are empty. This results in the following LF:

(29) $[_{TP}$ can't$_i$ $[_{TP}$ Ward t_i eat caviar]] & $[_{0P}$ Sue t_i *eat* beans]

This gives rise to the same logical representation as the one we gave for (19b) in (25), i.e., it gives the wide scope reading.

Suppose now reconstruction takes place before raising of the modal. In a structure like (30a) this results in (30b). Given that the modal's features are copied into the second conjunct here, LF raising will apply in both conjuncts now. This results in the LF in (30c), which gives rise to the logical representation in (23), i.e., to the distributed scope reading.

(30) a. $[_{TP}$ Ward can't eat caviar] & $[_{0P}$ Sue 0_T 0_V beans]
b. $[_{TP}$ Ward can't eat caviar] & $[_{TP}$ Sue *can't eat* beans]
c. $[_{TP}$ can't$_i$ $[_{TP}$ Ward t_i eat caviar]] & $[_{TP}$ can't$_j$ $[_{TP}$ Sue t_j eat beans]]

So, the scopal ambiguity found in (19c) is the result of reconstruction and operator raising being unordered with respect to each other. That (19b) does not exhibit this ambiguity and only has the wide scope reading is because, as noted, (24) already is a well-formed LF as it stands. Therefore, reconstruction is not necessary, so, under the assumption that it is a last resort process, it does not apply here.

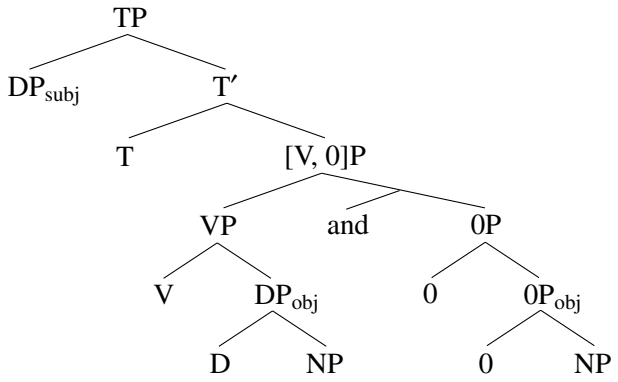
4. Object determiner sharing and the (non)recursivity of dependent ellipsis

4.1. *Object D-sharing*

Until now we have only discussed cases of D-sharing between subjects. In principle we expect dependent ellipsis of the D head of the object in the second conjunct to be possible as well. After all, complements are

possible targets of dependent ellipsis. This means that the following structure should be fine:

(31)



As observed by Lin (1999), cases of object D-sharing are indeed possible. For example, (32) can have a reading in which Bob gave *too many* newspapers to Joanne.

(32) Bob gave too many magazines to Jessica and newspapers to Joanne.

We predict that, in contrast to subject determiner sharing, which is dependent on coordinate T-ellipsis (section 3), object D-sharing should be dependent on coordinate V-ellipsis: the object is a dependent of V, not of T. Thus, cases in which only T but not V is gapped (which do license subject D-sharing; see (15b)) should not license object D-sharing. This is correct:[9]

(33) *Bob will give too many magazines to Jessica and ~~will~~ hand ~~too many~~ newspapers to Joanne.

Object D-sharing seems to be more restricted than subject D-sharing. According to McCawley (1993), the shared determiner is always initial in its conjunct. In line with this, cases of object D-sharing in which the subject of the second conjunct is not empty are impossible:

(34) *Bob gave too many magazines to Jessica and Harry ~~gave too many~~ newspapers to Joanne.

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[9] To avoid misunderstandings, note that (33) is of course ok without D-sharing ('Bob will hand newspapers to Joanne'), not the reading which we are interested in here.

This too follows from our analysis. Given that the second conjunct retains its subject, this cannot be a case of VP-coordination below T as in (31)–(32). We must be dealing with coordination at the TP level. As just noted, a coordinated elided T head does not license dependent ellipsis of the head of the object DP, given that the object is not a dependent of T.[10]

However, there still seems to be a possible way of deriving (34) that must be excluded. A coordinated elided T licenses dependent ellipsis of the head V of its complement. This has actually happened in (34). It must be prevented then that this null head could in turn license further dependent ellipsis of the head of its own complement, the object. To rule this out we hypothesize that the following restriction on dependent ellipsis holds:

(35) Dependent ellipsis is nonrecursive

Apart from the empirical motivation for this restriction, provided below, it has some initial plausibility. The coordinate 0 head licenses the 0P status of its dependent. However, as in any case where a head licenses some property of a dependent, the head of the dependent is not itself turned into a licenser of that same property on *its* dependents. Consider case assignment, for example: the head of a case-marked DP is not turned into a licenser of case on its dependents:

(36) I saw [the destruction [*(of) the city]]

The licensing of dependent ellipsis by a coordinate 0 head can be seen as another instance of licensing some feature of a phrase by a particular head, only in this case it is the absence of any feature that is licensed. If so, we do not expect the head of such a dependent 0P to become a licenser of further 0 heads itself. In other words, we expect dependent ellipsis to be nonrecursive.

However, it is possible that the head of the dependent to the licensing

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[10] This means that if the subject can stay within VP and if there is coordinate V-ellipsis, an example like (34) should be possible. Interestingly, the Dutch example (i) is acceptable, which may indicate that Dutch has a simple CP-VP structure, with no IP (AgrP-TP) structure in between (see Ackema et al. 1993 and Neeleman and Weerman 1999). However, other instances of attempted D-sharing fail in this environment just as in English. For example, a definite determiner cannot be shared here; see (ii). We have no explanation for this contrast.

(i) dat Marie teveel cadeautjes aan Jan gaf en Karel ~~teveel~~ fopsigaren aan Miep ~~gaf~~
that Marie too many presents to Jan gave and Karel (too many) fake cigars to Miep (gave)

(ii) * dat Marie de cadeautjes aan Jan gaf en Karel ~~de~~ fopsigaren aan Miep

head forms part of an extended projection containing other heads. In that case, it can share features with these other heads. Indeed, such feature sharing is an essential part of what defines an extended projection; see Grimshaw (1991, 1997). As argued by Grimshaw, there is a fundamental difference between the relation that holds between extended projections (namely, selection and, we might add, licensing) and those that hold within an extended projection (namely, feature sharing). Hence, a dependently elided 0 head can share its property of having no feature with lower heads in the extended projection. This does not mean that such dependent 0 heads can license further dependent ellipsis in any dependents of this extended projection. Again, a comparison with case-marking can be made. As noted, the head of a case-marked DP does not turn into a licenser of case on its dependents itself. However, it can share its case feature with other heads within its extended projection, a phenomenon known as 'case spreading'. An example from Middle Dutch is given in (37) (cf. Van Gestel et al. 1992).

(37) den vorseiden hospitale
the-DATIVE *previously-mentioned*-DATIVE *hospital*-DATIVE
to the previously mentioned hospital

Similarly, cases where dependent ellipsis appears to be recursive are instances of '0 spreading'.

Consider for instance an example like (10d), repeated here in (38), which appears to show the recursivity of dependent ellipsis.

(38) John wants to decapitate Fred and Bill 0 0 0 Pierre.

It seems relatively uncontroversial to assume that, whatever the correct analysis of the relation between *to* and the infinitive is, they are heads within one extended projection. This means (38) complies with (35): the coordinate 0 head in the second conjunct licenses the head of its dependent to be 0, and this head shares its property of being null with a lower head within the same extended projection.

The constraint in (35) does rule out the potential derivation of (34), however. The presence of the subject in the second conjunct in this example indicates that we are dealing with coordination at the TP-level and hence with coordinate T-ellipsis. Again the coordinate 0 head licenses its complement to be headed by 0, but this 0 head does not in turn license its complement DP to be headed by 0. It also cannot share its property of being null with this head because this head is in a different extended projection. Hence, as desired, determiner sharing is ruled out in this case.[11]

[11] Note that the complete direct object in the second conjunct in (34) can be elided:

The first type of independent motivation for (35) comes from considering which verbs can be gapped together and which cannot. In particular, we predict there to be a difference between two classes of verbs that take a verbal complement: so-called restructuring verbs and nonrestructuring verbs. Restructuring verbs are those that for all intents and purposes form a monoclausal construction with their verbal complement (as indicated by the possibility of clitic climbing out of this complement in a language like Italian, matrix scope readings for apparently embedded negation and quantifiers, an apparently embedded object determining which agreement is used on the matrix verb in Hungarian, and other phenomena of this sort). Typical examples of restructuring verbs are modals, aspectual verbs, motion verbs, causatives, and perception verbs. Given their monoclausal behaviour, a plausible analysis of constructions involving restructuring verbs is that a restructuring verb is a higher head

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(i) Bob gave the magazines to Jessica and Harry ~~gave the magazines~~ to Joanne.

Given our hypothesis, this cannot involve 0-licensing by the parasitically null head either. Instead, in this case we must be dealing with a one-step elision of one bigger constituent, to wit V′. This means that the indirect object must be higher up than the direct object at least at surface structure. At first sight, certain binding facts appear to contradict this assumption. In particular, the direct object may bind into the indirect object in the first conjunct while there still is the same elision as in (i) in the second conjunct:

(ii) Bob introduced the boys to each other's supervisors and Harry to the principal.

Following Neeleman and Weerman (1999), we assume that the default structure for a dative construction is a simple VP structure with the indirect object c-commanding the direct object; hence the possibility of V′ elision as in the second conjunct in (ii). However, Neeleman and Weerman argue that a VP-shell structure can be formed as a last resort option to save an otherwise ungrammatical structure. This happens, for example, in double object constructions in English (for case reasons) but also in the first conjunct in (ii), where the anaphor would be unlicensed if the c-command relations between the direct object and the indirect object would not be reversed. Hence, the full structure of (ii) is as in (iii)

(iii) $[_{TP}$ Bob $[_{VP}$ introduced$_i$ $[_{VP}$ the boys $[_{V'}$ t_i to each other's supervisors]]]] & $[_{TP}$ Harry $[_{VP}$ $[_{V'}]$ to the principal]]

(The mechanism of LF-reconstruction we adopted in section 3 must not be sensitive then to the structural difference between single-layered VPs and shell-VPs, or it could not apply in (iii), but we will have to refrain from trying to give a formal implementation of this here.) So, V′ ellipsis indicates that there is a simple VP structure while the presence of an anaphor in the IO necessitates shell formation. This means that, if the second conjunct in cases like (i) and (ii) really involves V′-ellipsis, it should be impossible to have binding of the DO into the IO in this conjunct itself. This is in fact the case (at least according to a majority of our informants); see (iv):

(iv) * Bob introduced the boys to the principal and Harry to each other's girlfriends.

This possibility of V′-ellipsis of course does not introduce a way of deriving (34) after all since the object contains overt material there.

in the extended projection of the lower verb. The higher verb may be a functional head in the projection of the lower one (cf. Cinque 2000), or it may be the case that the lower verb does not project any functional structure of its own, meaning that the two verbs form a complex predicate, sharing one functional structure (cf. Neeleman 1994). Wurmbrand (2001) argues that in fact both possibilities are instantiated, with certain differences between the two that do not bear on the point that follows. In both cases, the two verbs are heads in one extended projection. If a restructuring verb and its complement verb do indeed form one single extended projection, we may expect 0 spreading to be possible between the two.

In contrast, constructions in which a nonrestructuring verb takes a verbal complement clearly do not show monoclausal behavior. The two verbs must be in different extended projections then. This means that no 0 spreading between a nonrestructuring verb and the verbal head of its complement should be possible if (35) is correct.

In short, the prediction is that if the head of the complement to the coordinate head is a restructuring verb, then the head of *its* verbal complement may be elided under dependent ellipsis as well whereas when this head is a nonrestructuring verb, this should be impossible.

In Dutch, there is a distinction between restructuring and nonrestructuring verbs. Verbs taking an infinitival complement basically fall into two classes. The first class triggers a process of verb raising (VR) by which the head of the infinitival complement is adjoined to the selecting verb, as in (39a). These constructions show monoclausal behavior (Evers 1975), hence we may take it that verbs that trigger VR are restructuring verbs. The second class of verbs trigger extraposition of their complement, as in (39b).[12] These are nonrestructuring verbs.

(39) a. dat Jan [Marie een liedje t_i] hoorde zingen$_i$
that John Mary a song heard sing
that John heard Mary sing a song

b. dat Marie besloot [PRO een liedje te zingen]
that Mary decided a song to sing
that Mary decided to sing a song

[12] There are also verbs that allow either option (VR or extraposition). In addition, it is also possible that, instead of extraposing the entire complement of a non-restructuring verb, some material is scrambled out of this clause after which extraposition of the remnant takes place (the so-called 'third construction'; see for instance Den Besten and Rutten 1989). As Den Besten and Rutten show, a certain morphological phenomenon (absence of the so-called IPP effect) indicates that this construction is on a par with full extraposition in being a non-restructuring construction.

If the difference between VR constructions and extraposition constructions indeed corresponds to restructuring versus nonrestructuring constructions, (40) illustrates that the prediction made by (35) is confirmed by the data. If the complement to the coordinate 0 head is headed by a restructuring verb, as witnessed by its triggering VR of the head of *its* complement, then this latter head can be elided along with the restructuring verb. This is illustrated by (40a), where *gaan* 'go' is the restructuring verb in question, and *voordragen* 'recite' is the head of its complement. If the complement to the coordinate 0 head is headed by a nonrestructuring verb, as witnessed by extraposition of *its* complement, then the head of this extraposed complement cannot be elided in addition. This is illustrated in (40b), where *ophouden* 'stop' is the nonrestructuring verb in question, and *voordragen* 'recite' is the head of its complement.

(40) a. omdat Jan besloot die elegie te gaan voordragen
because John decided that elegy to go recite

en Cecilia ~~besloot~~ die ode ~~te~~ ~~gaan~~ ~~voordragen~~
and Cecilia (decided) that ode (to go recite)

because John decided to go and recite that elegy and Cecilia decided to go and recite that ode

b.?* omdat Jan besloot op te houden die elegie
because John decided to stop that elegy

voor te dragen en Cecilia ~~besloot~~ ~~op te~~ ~~houden~~ die
to recite and Cecilia (decided to stop) that

ode ~~voor te~~ ~~dragen~~
ode (to recite)

because John decided to stop to recite that elegy and Cecilia decided to stop to recite that ode

To recapitulate our account: restructuring verbs form a single extended projection with the verb they select while nonrestructuring verbs do not. Then (35) allows for the whole extended verbal projection of the complement to the coordinate 0 head to be 0 by one instance of dependent ellipsis plus feature spreading in (40a). In (40b), dependent ellipsis also targets the complement verb of the coordinate 0 head. However, in this case the verbal head in the complement to this complement is in a separate extended projection and thus by (35) cannot undergo dependent ellipsis.[13]

[13] With some heavy intonational help the example in (40b) is marginally acceptable (see also Evers 1975 for similar remarks), but the contrast with (40a) is clear. The data in English is less

4.2. *Further empirical evidence for the nonrecursivity of dependent ellipsis*

In general, the hypothesis that dependent ellipsis is a nontransitive relation (see (35)) helps explaining McCawley's (1993) observation that the shared determiner must be initial in its conjunct. This determiner must be the head of a DP that is a direct dependent of the head targeted by coordinate ellipsis and not a dependent of a dependent. Such a direct dependent will normally appear conjunct-initial if the head of the conjunct itself is null.

However, there is an environment where a test case for McCawley's generalization may arise. If in a double object construction both objects are direct dependents of V, then given our hypothesis either or both may have a null head if V undergoes coordinate ellipsis. In case both objects have a null head, one of these 'shared' determiners cannot be conjunct initial. In order to rule out the possibly interfering factor of a double-layered VP-shell structure in the double object construction (cf. Larson 1988), we illustrate this prediction with the OV-language Dutch, for which Neeleman and Weerman (1999) have shown that it differs from VO languages in not having such a shell structure (both objects are direct dependents of the V head in a single VP). It turns out that the predicted exception to McCawley's generalization occurs: the indirect object can be retained in the second conjunct when there is D-sharing between the direct objects, making the 0 head non-conjunct-initial, as in (41a). It is even possible to combine indirect object D-sharing and direct object D-sharing, as in (41b). (It should be noted, however, that sharing the definite determiner *de* here is impossible, just as in the case mentioned in footnote 10).

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clear. The presence of restructuring in English is not so firmly established as it is, for example, in Dutch. (A case has been made for *wanna*-contraction to involve restructuring (see Goodall 1991 and Roberts 1997), but alternative analyses presumably make this assumption superfluous (see Goodall 2001). Nevertheless, one would expect that verbs that are 'typical' extraposition verbs in a language like Dutch, like *decide*, would not allow dependent ellipsis to spread beyond them whereas a potential restructuring verb such as *want* should allow this. Judgments we received on the relevant examples varied considerably, but on the whole this does not seem to be borne out: many speakers allow for further dependent ellipsis of the complement verb to a verb like *decide*. This might mean that in English there is more covert restructuring (cf. Roberts 1997) than is going on overtly in Dutch. Such a result would have to be motivated independently, of course. We will leave it as an open issue.

(41) a. dat Jan de meisjes teveel cadeautjes gaf en
that John the girls too-many presents gave and
de jongens ~~teveel~~ fopsigaren
the boys too-many fake-cigars
that John gave the girls too many presents and the boys too many fake cigars

b. dat Jan teveel meisjes teveel cadeautjes gaf en ~~teveel~~ jongens ~~teveel~~ fopsigaren

So the hypothesis that all direct dependents of the head that has undergone coordinate ellipsis can be targeted by dependent ellipsis, while at the same time the 0 heads thus produced do not themselves turn into licensers for further dependent ellipsis, can adequately account for the cases falling under McCawley's generalization and also for a possible exception to it. In what follows we will point out that the hypothesis that dependent ellipsis is not a transitive relation accounts for a number of other observations as well.

First, in the case of coordinate V ellipsis, D-sharing should be impossible if the DP is the complement to a P. However, if the PP is a complement of the V, rather than an adjunct, then P-sharing should be possible. This is correct, as exemplified in (42a).[14] Now, crucially, a 'shared' P, being null only because of dependent ellipsis, cannot in turn license dependent ellipsis of the head of its complement DP. Under the assumption that P is not part of the extended projection of its complement nominal,[15] the D head cannot be null as a result of 0 spreading either. Indeed, (42b) is

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[14] Such cases do not involve coordination of a possible constituent *all magazines with X* below the P. Apart from it being unclear that this can be a constituent (but see Larson 1985 and Pesetsky 1995 for discussion), this is indicated by the fact that the first member of the serializer *either . . . or*, which arguably always indicates the left edge of the coordination at surface structure (see Hudson 1976 and Schwarz 1999) can precede the V-P sequence: *John either talked about all magazines with Jessica or all newspapers with Jane* (compare with ?**John talked about either all magazines with Jessica or all newspapers with Jane*).

[15] Contra Grimshaw 1991, but Grimshaw herself already notes that it is rather difficult to find arguments for the assumption that PP is an extended projection of DP (certainly compared to arguments for other instances of extended projection) and that the assumption brings along problems as well. There are some clear differences between the relation between P and DP and, for example, between C and IP-VP. For instance, the existence of V-to-I and (V-to-)I-to-C movement and of N-to-D movement has been well-motivated in the literature, but this is not so for (N-to-)D-to-P movement. (Inflected prepositions in languages like Breton might involve incorporated pronouns, but it is unlikely that the incorporation process is an instance of syntactic head movement in these cases; see Stump 1984 and Ackema and Neeleman 2001 for discussion).

impossible. Note that if we have coordinate ellipsis in a coordination of two PPs, the coordinate 0_P head *should* be able to license dependent ellipsis of the head of its complement so that in this case D-sharing should be possible. This is correct as well, as shown in (42c).

(42) a. John talked about all magazines with Jessica and ~~talked about~~ all newspapers with Jane
b.?* John talked about all magazines with Jessica and ~~talked about all~~ newspapers with Jane
c. John talked about all magazines and ~~about all~~ newspapers with Jane

In (43) we replicate the argument for the OV-language Dutch: (43a) is P-sharing between complement PPs in a coordinate V ellipsis structure, (43b) shows that dependent D-ellipsis into the DP-complement of the PP-complement is impossible whereas (43c) shows that such D-ellipsis is possible in a coordinate P ellipsis structure.

(43) a. dat Marie over alle problemen nadenkt en ~~over~~
that Mary about all problems thinks and (about)
alle puzzels ~~nadenkt~~
all puzzles (thinks)
that Mary thinks about all problems and all puzzles
b.?* dat Marie over alle problemen nadenkt en ~~over alle~~ puzzels ~~nadenkt~~
c. dat Marie over alle problemen en ook ~~over alle~~ puzzels ~~nadenkt~~

Second, in cases of object determiner sharing, additional 'N-sharing' should be allowed. Object determiner sharing involves dependent ellipsis of the D head of the complement to a coordinate 0_V head. Since D and N are in the same extended projection, N may then be 0 as well. As (44) illustrates, this is indeed possible. (The presence of the VP adverbials in both conjuncts shows that these are not coordinations below the VP level, but are indeed cases of object D-sharing with additional N-sharing.)[16]

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[16] Examples in which the 0_N head is modified by an attributive adjective are ungrammatical in English (see (i)). The equivalent of (i) is grammatical in Dutch (see (ii)). This is presumably related to the fact that stranded adjectival modifiers of empty heads are ruled out in English in general (see (iii)) while they are allowed in Dutch (see (iv)).

(i) * John saw the new picture on Tuesday and ~~saw the~~ old ~~picture~~ on Wednesday.

(44) a. John saw the picture of Mary on Tuesday and ~~saw the picture~~ of Sue on Wednesday.
b. John saw too many boys with white wine on the first floor and ~~saw too many boys~~ with red wine on the second floor.

If 'N-sharing'is allowed in cases of object determiner sharing, then it should be equally allowed in cases of subject determiner sharing. As (45) shows, this is indeed the case. In (45) there is coordinate T-ellipsis, with additional dependent ellipsis of D in the subject DP (and also of V in the complement VP). The N head of the subject can be null by virtue of being in the same extended projection with the shared D head.[17]

(45) Too many setters with long hair are called Kelly and ~~too many setters~~ with short hair ~~are called~~ Tony.

Now, although N-sharing is possible both in the case of subject and object determiner sharing, further dependent ellipsis into the modifier of the N is predicted to be impossible by (35). This modifier also is a separate extended projection, so 0 spreading cannot go beyond N either. Thus, P-sharing should be impossible here. This is correct:[18]

(46) a.*John saw the picture of Mary on Tuesday and ~~saw the picture~~ ~~of~~ Sue on Wednesday.
b.*Too many setters with long hair are named Kelly and ~~too many setters with~~ short hair ~~are named~~ Tony.

(ii) Jan zag de nieuwe foto op dinsdag en ~~zag~~ ~~de~~ oude ~~foto~~ op woensdag.
John saw the new picture on Tuesday and (saw) (the) old (picture) on Wednesday

(iii) Harriet bought a new bike, but I bought an old *(one).

(iv) Harriet kocht een nieuwe fiets, maar ik kocht een oude.
Harriet bought a new bike but I bought an old

[17] Again, an adjectival modifier cannot be stranded in the subject in English (i), but the equivalent is allowed in Dutch (ii).

(i) * Too many old setters are called Kelly and ~~too many~~ young ~~setters are called~~ Tony.

(ii) Teveel oude setters heten Kelly en ~~teveel~~ jonge ~~setters~~ ~~heten~~ Tony.
too-many old setters are-called Kelly and (too-many) young (setters) (are-called) Tony

[18] At least for some speakers, (i) is acceptable with a reading that does not involve books with multicolor covers, indicating that the sentence involves coordination above the N head *books* and thus dependent ellipsis into the complement PP.

(i) Jane read all the books with red covers and blue covers.

Of course, N-sharing need not be the result of 0 spreading in an extended projection. Given our reasoning, N-sharing is predicted to be possible also when the 0_D head in the second conjunct is the coordinate 0 head itself. In that case, the N head can be directly targeted by dependent ellipsis. Consider (47) where the nonrestrictive relative clauses, which are attached at the DP-level, indicate that we have coordination of two DPs.[19]

(47) Jane watched the boys with white wine, who she doesn't like, and ~~the boys~~ with red wine, who she adores.

In sum, the constraint in (35) plus the notion of feature spreading in extended projections have the effect that when there is coordinate ellipsis, all heads in the extended projection of a direct dependent to the coordinate 0 head can be 0 as well, but dependent ellipsis cannot go beyond this. This allowed us to account for the following observations: (i) no object D-sharing in coordinate T-ellipsis; (ii) no ellipsis of the V-head of the complement of a dependently elided nonrestructuring verb; (iii) no object D-sharing when the object is inside a PP-complement – instead, P-sharing is allowed; (iv) N-sharing is allowed in addition to object D-sharing and subject D-sharing in coordinate V- and T-ellipsis, respectively, but (v) no further ellipsis into the complement of N is allowed in these cases; (vi) dependent N-ellipsis is allowed in coordinate D-ellipsis cases.

5. The independence of D-sharing and T-sharing

It seems to us that the analysis of D-sharing in terms of dependent ellipsis argued for above is conceptually attractive: it reduces the phenomenon to an instance of a more general phenomenon (it is analyzed as any other case of apparent 'nonconstituent gapping', using Williams's (1997) analysis of these). Empirically speaking, it is adequate as well, as we hope to have shown in sections 3 and 4. In fact, it has some empirical advantages, besides those pointed out in section 4.2.

As noted in section 1, the Johnson/Lin analysis predicts that D-sharing will never be possible without there being T-sharing (T gapping in the second conjunct) as well. If D is shared, i.e., when it is merged higher than the level of the coordination, then T will necessarily be shared as well, as

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[19] Here too, the example in (i), due to an anonymous reviewer, is ruled out independently as adjectival modification of empty heads is disallowed in English.

(i) * I bought too many new magazines and ~~too many~~ old ~~magazines~~.

T is merged above D by assumption.[20] As it turns out, however, T-gapping is not always necessary for D-sharing to be possible. Moreover, the examples in which this occurs are predicted to be possible by the analysis presented here.

Consider CP-coordinations with *wh*-movement to spec-CP. A coordinate 0_C is predicted to license subject D-sharing, without T-gapping being necessary, in case the subject undergoes *wh*-movement. After all, it is the surface position of the constituent whose head is targeted by dependent ellipsis that counts, and a *wh*-moved constituent in [Spec, CP] is a dependent of C. This prediction is correct. As (48) shows, subject determiner sharing in [Spec, CP] is allowed both in embedded clauses (48a) (example from McCawley 1993, p. 245) and main clauses (48b).

(48) a. I began to wonder how many paintings will never be seen, ~~how many~~ songs will never be heard, and ~~how many~~ books will never be read because of wars yet to come.

. . . [$_{CP}$ [$_{DP}$ [$_{D}$ how many] paintings] C [$_{TP}$ t_{DP} will never be seen]], [$_{0P}$ [$_{0P}$ [$_{D}$ 0] songs] 0 [$_{TP}$ . . .

b. How many paintings will never be seen, ~~how many~~ songs ~~will~~ never be heard, and ~~how many~~ books ~~will~~ never be read because of wars yet to come?

[$_{CP}$ [$_{DP}$ [$_{D}$ how many] paintings] will [$_{TP}$ t_{DP} t_{T} never be seen]], [$_{0P}$ [$_{0P}$ [$_{D}$ 0] songs] 0 [$_{TP}$ . . .

Note that we must indeed be dealing with coordinate C ellipsis in the second conjunct in (48a), rather than just PF-deletion or non-spelling-out of the complementizer because of the doubly filled comp filter (DFCF) as in the first conjunct. A complementizer that only fails to be spelled out, rather than being a 0 head in syntax itself, is not expected to license dependent ellipsis. Indeed it does not, as (49), which does not involve coordination, shows.

(49) *How many girls wonder ~~how many~~ boys will forget their bus tickets.

Interestingly, in colloquial variants of Dutch the DFCF can be violated, so C need not be empty in cases of *wh*-movement. Nevertheless, in cases of D-sharing between *wh*-moved constituents, C is obligatorily empty here

[20] This means the prediction can be avoided by assuming D can be merged randomly in any position in the functional structure above VP.

as well, showing that indeed the coordinate 0_C is the licenser of dependent D-ellipsis in this case. This is shown in (50).

(50) a. Ik vroeg me af hoeveel schilderijen (of) ik ooit
I wondered how many paintings (if) I ever
zou zien, hoeveel liedjes (of) ik ooit zou horen
would see, how many songs (if) I ever would hear
en hoeveel boeken (of) ik ooit zou lezen.
and how many books (if) I ever would read
I wondered how many paintings I would ever see, how many songs I would ever hear and how many books I would ever read.

b. Ik vroeg me af hoeveel schilderijen (of) ik ooit zou zien, ~~hoeveel~~ liedjes (?*of) ik ooit zou horen en ~~hoeveel~~ boeken (?*of) ik ooit zou lezen.

In fact, it should not matter whether it is the subject or the object (or another constituent) which is in [Spec, CP] as the phrase is a dependent of C in this position anyway. Indeed, object D-sharing between *wh*-moved objects in a coordinate [C,0]P structure is possible as well:[21]

(51) a. I wonder how many paintings Mary will never see, songs Bill will never hear and books Harry will never read because of wars yet to come.

b. The Temple of Iris, whose exterior the Romans will destroy in Act I and interior the Greeks will build up again in Act III, is a fine piece of architecture.

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[21] Object determiner sharing in [Spec, CP] in main clauses is impossible according to one native speaker unless in addition the subject is also elided, as in (i). We do not have an explanation for this phenomenon, but, as (ii) shows, this phenomenon is independent of determiner sharing and seems to be a property of C-gapping in coordinated main questions in general. Another issue is that the elision of the subject in (i) must not depend on the 0_C head, or it would be an instance of recursive dependent ellipsis. Note, however, that there is T-to-C movement here. Traces of moved heads have the licensing capabilities of that head (to draw the parallel with case marking again: the trace of a moved verb in a V2 language can assign case to an object). Consequently, the trace of 0_C in T can directly license dependent ellipsis in its specifier (see also Williams's (1997) example (145)). Note that in an embedded clause like (51a), without T-to-C, 0_C indeed does not license elision of the subject, as shown in (iii).

(i) How many paintings will Mary never see, songs (*she) never hear, and books (*she) never read, because of wars yet to come?

(ii) ?* How many paintings will Mary never see, how many songs she never hear, and how many books she never read, because of wars yet to come?

(iii) * I wonder how many paintings Mary will never see, songs will never hear and books will never read because of wars yet to come.

The examples above could be accounted for under Lin's and Johnson's approaches by assuming that the determiner of the subject or of the object may be optionally merged higher than T but below C (cf. footnote 20). However, it would be unclear then why this should only be allowed in questions, when the subject or object subsequently moves to [Spec, CP], and not in declaratives. In other words, it would be unclear how to prevent subject and object D-sharing without gapping T or V, respectively, in declaratives.

There are further cases that distinguish the two analyses. Like dependent ellipsis of the head of its specifier, a coordinate 0_C head should license dependent ellipsis of the head of its complement. So dependent T-ellipsis, i.e., T-sharing, should be possible in a [C, 0]P coordination. Contrary to this, the Johnson/Lin approach predicts that T-sharing should be impossible in a CP-coordination. Just like D-sharing should be impossible without T-sharing because D is below T, T-sharing should be impossible without C-sharing because T is below C. Indeed, Lin (2000) argues that T-gapping in two conjoined CPs is impossible. However, the following are possible, indicating that dependent T ellipsis in the complement of a 0_C is possible:

(52) a. The temple of Dagon, [$_{CP}$ whose exterior is seen in act I] and [$_{CP}$ whose interior ~~is~~ destroyed in act III], is a major feature of the opera.

b. Dat is Jan, wiens vader gek is en wiens moeder
that is John, whose father mad is and whose mother
ziek ~~is~~.
ill
That is John, whose father is mad and whose mother is ill.

That the dependent T-ellipsis in cases like (52) is indeed dependent, i.e., licensed by a coordinate 0_C head, can again be shown by minimal pairs in which C is overt or empty. In (52) it is impossible to have an overt C because of the DFCF (in Dutch as well, where the DFCF can be violated in complement clauses but not in relatives). However, consider the following examples:

(53) a. That the Earth revolves around the Sun and (that) the Moon revolves around the Earth are two well established facts.
b. That the Earth revolves around the Sun and (*that) the Moon around the Earth are two well established facts.
c. That the Earth revolves around the Sun and the Moon around the Earth is a well established fact.

The difference between (53a) and (53b) shows that gapping of the tensed verb is indeed dependent here, namely on coordinate C-ellipsis: if C is not elided, T cannot be elided either. This accounts for Neijt's (1980) observation that gapping into embedded finite clauses is impossible. In fact, it is possible but only if the complementizer is elided by coordinate ellipsis. This often makes the structure similar to one which involves TP-coordination below C rather than CP-coordination, but this is not the case in (53b): the plural agreement on the verb *are* indicates that the subject clause consists of a (CP-)coordination here and not of a single CP (containing an internal TP-coordination). Compare (53b) with (53c), which shows a case of a [T, 0]P coordination below C. In short, (53b) shows that dependent T-gapping is possible in coordinate CPs, provided there is C gapping.

Interestingly, because in (53b) T in the second conjunct is only 0 by dependent ellipsis, rather than by coordinate ellipsis, it should not now license dependent D ellipsis in its specifier, given the nonrecursivity of dependent ellipsis across extended projections (see section 4). In other words, subject D-sharing should be impossible in this case. In (54) it is shown that this prediction is borne out. So not only are there contexts in which D-sharing is possible without T-sharing, as discussed above, there are also contexts in which T-sharing is possible but D-sharing nevertheless is not.

(54) ?* The two most important results of the questionnaire are, that too many sopranos eat at home and ~~that too many~~ tenors ~~eat~~ in a restaurant.

* $[_{CP}\ [_{C}$ that$]\ [_{TP}\ [_{DP}\ [_{D}$ too many$]$ sopranos$]$ eat at home$]]$ and $[_{0P}\ [_{C}\ 0]\ [_{0P}\ [_{0P}\ [_{D}\ 0]$ tenors$]\ 0$ in a restaurant$]]$

((35) forbids 0_C-0_T-0_D licensing chain)

Compare this with the case in which there *is* a [T, 0]P-coordination below C, indicated by singular agreement. Now dependent D-ellipsis is possible again, as predicted (it is licensed by the coordinate 0_T head):

(55) The most important result of the questionnaire is that too many sopranos eat at home and ~~too many~~ tenors ~~eat~~ in a restaurant.

$[_{CP}\ [_{C}$ that$]\ [_{TP}\ [_{DP}\ [_{D}$ too many$]$ sopranos$]$ eat at home$]$ and $[_{0P}\ [_{0P}\ [_{D}\ 0]$ tenors$]\ 0$ in a restaurant$]]$

6. Conclusion

In this paper we provided an analysis for the phenomenon of determiner sharing that accounted for the characteristics of the construction noted by McCawley (1993) and Lin (1999), and some additional ones. Our account followed Williams's (1997) analysis of coordinate ellipsis and dependent ellipsis. In fact, we argued that determiner sharing is just a special case of dependent ellipsis. Thus we accounted for the fact that in a determiner sharing construction, the NP complement to the shared determiner in the second conjunct must be disanaphoric to the corresponding NP in the first conjunct, a hallmark of constructions involving ellipsis. Our analysis departed from Williams in that we argued that the process of dependent ellipsis is not recursive. Rather, we assumed that the property of being null can be shared within a single extended projection. The assumption that dependent ellipsis is not recursive allowed us to account for two generalizations about determiner sharing of McCawley (1993) and Lin (1999) while predicting certain attested exceptions to these. On the one hand, we showed that subject determiner sharing is possible in coordinate T-ellipsis while object determiner sharing is possible in coordinate V-ellipsis. On the other hand, we showed that in coordinate C-ellipsis, subject determiner sharing may be dependent on C-ellipsis if the subject is moved to [Spec, CP] and that subject determiner sharing is impossible in coordinate C-ellipsis, even if T is gapped, if the subject is *in situ*.

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